Pelvic Organ Prolapse

Consultation Information

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THE URINARY SYSTEM

THE HEALTHY URINARY SYSTEM

The urinary system is comprised of several muscles, organs, and nerves which collect, store, and release urine. The **kidneys** form urine by filtering waste and extra water from the bloodstream. The urine is carried through the **ureters** to the **bladder**, a hollow muscular organ shaped like a balloon. Located in the pelvis, it is held in place by ligaments attached to other organs and to the pelvic bones. The bladder stores urine until you are ready to empty it. It swells into a round shape when it is full and decreases in size as it empties. A healthy bladder can hold up to 16 ounces (2 cups) of urine comfortably for two to five hours.

The bladder opens into the **urethra**, the tube which allows urine to pass outside the body. **Sphincter muscles**, circular muscles at the end of the urethra, close tightly to keep urine from leaking. Nerves in the bladder signal you when it is time to empty your bladder. The sensation intensifies as the bladder continues to fill and reaches its maximum capacity. When you are ready to urinate, the brain signals the sphincter muscles to relax. At the same time, the brain signals the bladder muscles to tighten, squeezing urine out. Urine can then leave the bladder through the urethra. When these signals occur in the correct order, normal urination occurs.

PROBLEMS IN THE URINARY SYSTEM

Problems in the urinary system can be caused by aging, illness, or injury.

Stress Incontinence: The involuntary leakage of urine associated with an increase in abdominal pressure is called *incontinence.* Weakening of the muscles of the sphincters and the pelvis can cause *incontinence* because the sphincter cannot remain tight enough to hold urine in the bladder or does not have enough support from the pelvic muscles.

Overactive Bladder: You may have “bladder spasms” or frequency of urination. This is called an *overactive bladder* and may result in involuntary leakage of urine associated with urgency.

Pelvic Organ Prolapse: In addition, you may experience *pelvic organ prolapse*, or falling of the pelvic organs down into, or even out of, the vagina. This can be considered a hernia of the pelvic floor.

PELVIC ORGAN PROLAPSE

The uterus, bladder, intestines, and rectum are all located around the vagina. Because of their close proximity, it is possible for them to herniated, or bulge, into the vagina. Such bulges are called **pelvic floor prolapses** and present as a feeling of pelvic pressure or heaviness. It may also feel like “something is falling out of the vagina”.

Pelvic floor prolapse occurs when the pelvic floor muscles and firm support structures, called ligaments, become weak or damaged and can no longer support the pelvic organs. It can be brought on by childbirth (almost 50% of women who have had vaginal births will develop some form of pelvic organ prolapse in their lifetime), chronic coughing, chronic constipation, heavy lifting, menopause, obesity, normal aging, previous pelvic surgery (hysterectomy), or genetics.

Symptoms of prolapse include:

- A bulge in your vagina that ranges in size from quite small to very large
- Discomfort or pressure in your pelvis or vagina
- Difficulty having a bowel movement
- Difficulty emptying your bladder
- Loss of urinary control with coughing, laughing or sneezing (stress incontinence)
- Pain during intercourse
- Lower back pain
- Increased discomfort with long periods of standing
- Recurrent bladder infections
- Urge incontinence if the prolapse is severe

Pelvic organ prolapse is unlikely to be life threatening, but can seriously limit your lifestyle. If you are refraining from sexual activity, limiting physical activity, or coping with the unpredictability of urinary or fecal incontinence, it is important to understand that it doesn't have to be that way; treatment is available.

TYPES OF PROLAPSES

Cystocele *(bladder prolapse)*
Cystocele, the most common type of prolapse, occurs when the bladder prolapses and falls toward the vagina creating a bulge in the anterior vaginal wall.

Rectocele *(prolapse of the rectum or large bowel)*
Rectocele occurs when the large bowel (rectum) loses support and bulges into the posterior wall of the vagina. It is different from a rectal prolapse (when the rectum falls out of the anus). The main symptom is stool getting trapped in the pocket.

Enterocele *(prolapse of the small bowel)*
Enterocele occurs when part of the small intestine that lies just behind the uterus may slip down between the rectum and the back wall of the vagina. It is more common in women who have had a hysterectomy.

Uterine *(prolapsed of the uterus)*
Uterine prolapse occurs when the uterus (womb) drops down into the vagina.

INITIAL SCREENING

Your physician will need a complete history, physical examination, urinalysis, and post void residual test in your initial screening in order to begin accessing your medical condition.

History and Physical Examination

Your physician will inquire into your symptoms, past urological and gynecological history, prior surgeries, medical conditions such as diabetes, stroke, or other nervous system diseases or conditions, and medications being taken. A physical examination is then performed, frequently with special attention to the pelvic examination and evaluation of the nerve function of the pelvis and lower extremities. A pelvic examination is done to see if the bladder, rectum, and/or uterus are normal or whether they have "fallen".

Urinalysis or Urine Culture

A clean catch or catherized urine sample will be collected and analyzed to determine if you have a urinary tract infection, blood, or other abnormality in your urine. If infection is suspected, the urine sample will be sent for culture.

Post Void Residual

This test is performed to see whether any urine remains in you bladder after you have attempted to empty it completely. Measurements may be made by catheterization or ultrasound. A normal post-void residual is less than 100 cc.

FURTHER EVALUATION

If conservative treatment is working, you may want to stay the course and continue the current treatment plan. If conservative treatment fails, we recommend further evaluation including urodynamic testing, keeping a voiding diary, and having a cystoscopy performed.

Urodynamic testing focuses on your bladder's ability to fill and empty.

A **cystometrogram** (CMG) measures how much your bladder can hold, how much pressure builds up inside your bladder as it stores urine, and how full it is when you feel the urge to urinate. Before testing can be started, any possibility of an infection will need to be ruled out.

First, the doctor or nurse will use a catheter to empty your bladder completely. Then a special, smaller catheter with a pressure-measuring tube called a cystometer will be used to fill your bladder slowly with warm water. Another catheter may be placed in the rectum to record pressure there as well.

You will be asked how your bladder feels and when you feel the need to urinate. The volume of water and the bladder pressure will be recorded. Involuntary bladder contractions can be identified. While your bladder is being filled for the CMG, it may suddenly contract and squeeze some water out without warning. The cystometer will record the pressure at the point when the leakage occurred. This reading may provide information about the kind of bladder problem you have. To help the doctor or nurse evaluate your sphincter muscles, you may be asked to cough, strain, exhale while holding your nose and mouth (to apply abdominal pressure to the bladder) or shift positions during the procedure. Depending on the patient’s symptoms and anatomy, a vaginal pack may be inserted and the procedure repeated. This “mimics” the function of your bladder and pelvis after prolapsed correction.

After the CMG, you will be asked to empty your bladder so that the catheter can measure the pressures required to urinate. This pressure flow study helps to identify bladder outlet obstruction that may occur with a fallen bladder or rarely after a surgical procedure for urinary incontinence.

You will also be given an **electromyography** to determine if your urinary problem is related to nerve damage. This test measures the muscle activity in the urethral sphincter using sensors placed on the skin near the urethra and rectum. Sometimes the sensors are on the urethral or rectal catheter. Muscle activity is recorded on a machine. The patterns of the impulses will show whether the messages sent to the bladder and urethra are coordinated correctly.

You may have mild discomfort for a few hours after these tests. Drinking two 8-ounce glasses of water each hour for two hours should help. Ask your doctor whether you can take a warm bath. If not, you may be able to hold a warm, damp washcloth over the urethral opening to relieve the discomfort. Your doctor will give you an antibiotic to take for one or two days to prevent an infection. If you have signs of infection—including pain, chills, or fever—call your doctor at once.

Voiding Diary

A voiding diary is an **essential** part of your evaluation. It will allow you to communicate clearly with your physician about the status of your bladder, including how frequently you urinate during the day and at night, how much fluid you drink during the day, and how much urine leakage you experience.

Cystoscopy

Cystoscopy is a test that allows your doctor to look at the interior lining of the bladder and urethra, areas which usually do not show up well on X-rays. A cystoscope is a thin lighted viewing instrument that is inserted into the urethra and advanced in to the bladder. Your doctor then examines the inside of your bladder for stones, tumors, bleeding, and infection.

Just before the procedure, you will be allowed to empty your bladder. Cystoscopy is usually performed with local anesthesia; a small amount of numbing jelly is placed into your urethra to reduce discomfort. After the anesthetic takes effect, a well-lubricated Cystoscope is inserted into your urethra and slowly advanced into your bladder. If your urethra has a spot that is too narrow to allow the scope to pass, other smaller instruments are inserted first to gradually enlarge the opening.

Once the Cystoscope is inside your bladder, sterile water is injected through the scope to expand your bladder creating a clear view. The Cystoscope is usually in your bladder for only two or three minutes. You may feel a cool sensation, an uncomfortable fullness, or an urgent need to urinate. Try to relax during the procedure by taking slow, deep breaths. Most people report that this procedure is not nearly as uncomfortable as they had expected.

After the procedure, you may need to urinate frequently, with some burning during and after urination for a day or two. A pinkish tinge to the urine can be common for several days after Cystoscopy. It is important to drink ample fluids to help minimize the burning and to prevent a urinary tract infection afterwards.

Call our office if:

- Your urine remains red or you see blood clots after you have urinated several times.
- You are unable to pass urine 8 hours after the procedure.
- You develop a fever, chills, or severe pain in your flank or abdomen after the procedure.

CONSERVATIVE TREATMENTS

Your physician will consider conservative treatments for your condition, including behavior therapy, hormone replacement, Kegel exercises, and the use of a pessary.

Behavior Therapy

Avoid excess body weight

Being overweight increases the internal pressure on the pelvic organs, thereby increasing prolapse. Try to maintain an ideal body weight.

Stop Smoking

Nicotine is not only irritating to the bladder and may cause overactive bladder symptoms, but it also decreases deposition of collagen (the body's natural support mechanism). A smoker's repeated and chronic coughing can worsen prolapse.

Control Coughing

Talk to your doctor and get treatment for a chronic cough or bronchitis.

Maintain Bowel Regularity

Avoid constipation by eating high-fiber foods. The best way to add fiber to the diet is to increase the quantity of fruits and vegetables to a minimum of five servings daily. For many people, however, five servings daily may be inconveniently large or may not provide adequate relief from constipation. In this case, fiber supplements can be useful. Metamucil, Benefiber, and Citrucel are common over-the-counter supplements which work well.

Additionally the use of an osmotic laxative, Miralax, can be exceptionally helpful. Miralax works by pulling additional water into the digestive tract. It is an over the counter bowel preparation that is safe with very minimal side-effects.

Avoid straining to have bowel movements. Ask your doctor for a stool softener if home remedies don't work. Try to relax and move your bowels at the same time every day. Don't delay going to the bathroom when you feel the urge. If you have a rectocele you can ease bowel movements by putting your finger in your vagina and pushing against the bulging vaginal wall.

Avoid Heavy Lifting

Avoid lifting more than ten pounds at a time. If you have to lift a heavy object, use your legs instead of your waist or back.

Hormone Replacement

After menopause or a hysterectomy, a woman's body produces less of the hormone estrogen. This drop in estrogen can contribute to changes in the lining of the urethra, bladder, and vagina causing vaginal dryness, overactive bladder symptoms, incontinence, recurrent urinary tract infections, and prolapse. Applying estrogen in the form of a vaginal cream, vaginal tablet, or ring will improve the quality of the tissues of the vagina, urethra, and the pelvic floor and may help to relieve some of these symptoms. (See appendices for application instructions.)

Kegel Exercises (Pelvic Floor Therapy)

Kegel exercises strengthen your pelvic floor muscles to improve symptoms of minor prolapse. Imagine that you're trying to stop from passing gas. Squeeze the muscles you would use and hold for a count of three. Relax, count to three again, then repeat. Relaxation is a very important part of pelvic floor rehabilitation. Muscles that are chronically contracted can lead to worsening of urgency and frequency of urination and constipation. It can be difficult to know if you're using the correct muscles and coordinating them appropriately. Many women have this trouble therefore a physical therapist can teach you biofeedback techniques to help you identify the right muscles to contract. Typically, six weekly sessions are necessary for maximum improvement. You can do these exercises almost anywhere – while you're driving, watching television, or sitting at your desk at work. However, **do not** practice Kegel exercises while urinating as it can result in dysfunctional urinating and incomplete bladder emptying. (See appendices for Kegel instructions.)

Pessary

A pessary is a plastic or rubber ring-like device that is placed in the vagina to support the bladder, uterus, or rectum. Some women find that wearing a pessary helps alleviate the discomfort caused by prolapse and improves bladder emptying. A healthcare provider can fit a patient with a pessary in the office. This can either be maintained by the patient or maintained by regular visits to the office for removal, cleaning, and reinsertion. Pessaries rarely cause problems but can increase the chance of developing vaginal irritation, ulceration, or infection.

SURGICAL TREATMENTS

When conservative treatments aren't working, severe or especially uncomfortable cases of prolapse may require surgery. There are many surgical procedures to correct pelvic organ prolapse.

Over the last decade or so, pelvic floor surgeons have made great advances with regards to surgical correction of pelvic organ prolapse. Historically, traditional repair utilizing the patient's own tissues for the repair have had a high recurrent rate, with up to 30% of patients requiring a second or third surgical procedure within 5 years. Due to this high recurrence rate, practitioners have been utilizing different types of materials to augment these surgical corrections. Biologic agents such as human cadaveric tissue and porcine dermis have been used; however, there is not a lot of published evidence to suggest that these materials decrease the long-term recurrence rates. Non-absorbable polypropylene mesh has been used in inguinal hernia repairs for decades. It has provided a much greater long term success rate; therefore, pelvic surgeons have translated this knowledge for prolapse repair. Unfortunately with this advance in reduction of pelvic prolapse recurrences, there are some significant additional risks that patients need to be familiar with prior to undergoing any surgical correction augmented with mesh material (see appendix A).

Cystocele Repair

This procedure is done in the operating room under general anesthesia and takes one to two hours. An opening is made in the anterior vaginal canal that allows the weakened vaginal tissue to be identified. With traditional repairs, the prolapse is elevated back into place and the muscles and ligaments of your pelvic floor are tightened and reinforced using sutures. This is the point that any biologic or mesh materials may be utilized. This procedure may require the removal of some stretched tissue. In the end, the goal of surgery is to restore the natural shape and function to the vagina and prevent recurrence of prolapse. This surgery may be performed on an out-patient basis or you may spend at least one night in the hospital. Most patients can void before they leave the hospital. Occasionally the patient must go home with a catheter for a few days. Potential complications include urinary retention, infection, damage to the bladder or urethra, vaginal or bladder erosion, chronic pain, bleeding, and incontinence. For approximately six weeks, you should avoid sexual intercourse, heavy lifting, and rigorous exercise.

Rectocele Repair

This procedure is done in the operating room under general anesthesia and takes one to two hours. It is often combined with a cystocele repair. An opening is made in the posterior vaginal canal that allows the weakened rectal tissue to be identified. The prolapse is reduced back into place and the muscles and ligaments of your pelvic floor are tightened and reinforced using sutures and/or durable mesh. This procedure may require the removal of some stretched tissue. In the end, the goal of surgery is to restore the natural shape and function to the vagina and prevent recurrence of prolapse. This surgery may be performed on an out-patient basis or you may spend one night in the hospital. Potential complications include infection, injury to the rectum, vaginal or rectal erosion, chronic pain, and bleeding. For approximately six weeks, you should avoid sexual intercourse, heavy lifting, and rigorous exercise.

Sacrocoplopexy

This is a procedure for repairing the vaginal vault, restoring the length and shape of the vaginal canal, and reducing an enterocele. This procedure is done in the operating room under general anesthesia and can take anywhere from 1-5 hours depending on the approach which is utilized and what other additional procedures are done. It is often combined with cystocele and rectocele repairs. It can be performed abdominally, with the help of the Da Vinci Robot, or trans-vaginally. Sutures and/or durable mesh are used to fix the vagina to the sacral bone, holding it securely in its restored position. This surgery is typically performed in-patient, and you will be required to spend one or two nights in the hospital. Potential complications include infection, damage to the ureters or bowel, chronic pain, and bleeding.

Hysterectomy

A hysterectomy may be combined with any of the above procedures. This surgery is typically performed by the gynecologist of your choice.

Mid-urethral Sling

A mid-urethral sling is designed to prevent **stress** urinary incontinence and may be performed at the same time as a prolapse repair, depending on pre-operative symptoms. There is a 90 – 95% success rate with this type of procedure and maintains approximately 70% success at 10 years. It does require that there is urethral hypermobility which is determined by physical examination. The sling can be performed alone or in conjunction with other pelvic floor prolapse procedures. A special mesh tape is placed underneath the urethra to prevent leakage. This tape is permanent and healing anchors it into place. Most patients can void before they leave the hospital. Occasionally the patient must go home with a catheter. Potential complications are rare and include urinary retention, infection, and damage to the bladder or urethra, urethral or vaginal erosion, chronic pain, bleeding, and continued incontinence. For approximately six weeks, you should avoid sexual intercourse, heavy lifting, and rigorous exercise.

There are generally three ways to place these slings. A retropubic approach includes a small vaginal incision and two small puncture incisions low on the abdomen. Additional risks with this approach include bowel perforation and post-operative urgency. A trans-obturator approach utilizes a small vaginal incision and two small puncture incisions high on the inner thighs. There really is no risk of bowl perforation, but temporary thigh pain may be a rare complication. The most recent development includes the use of single incision slings. There is only one small vaginal incision made. Although this is a highly successful procedure, it is unclear if the long-term success rates will be as high as other types of mid-urethral slings. All of these approaches are successful and are often performed based on surgeon preference.

Surgery may relieve some, but not all, of the symptoms caused by pelvic support problems. In a few cases, symptoms persist or return. During surgery, your doctor has to use the already weakened fascia and muscles within your pelvis to improve support. The factors that caused you to have prolapse initially may cause it to occur again. After surgery, controlling your weight, avoiding constipation, not smoking, and avoiding activities that put pressure on these muscles such as heavy lifting will increase your chances of avoiding a recurrence of the prolapse.

POST-OPERATIVE INSTRUCTIONS

- You can expect to have some vaginal spotting for up to one month.
- You should not drive for 48 hours after leaving the hospital. You may drive in two days if you are not taking any narcotic pain pills.
- No sexual activity for six weeks.
- No tampon use for six weeks.
- Avoid constipation. Do not strain to have a bowel movement. Take a stool softener or Milk of Magnesia as needed. (Be aware that pain pills often cause constipation).
- No tub baths, swimming, or hot tubs for two weeks (you may safely take showers).
- You can walk and go up and down stairs as much as desired, but avoid vigorous activity.
- Do not lift more than 10 pounds for six weeks.
- Call if you develop fever above 101 degrees, have shaking chills, or pain so excruciating that pain medication is not relieving it.
- You may notice some urgency and a tendency to leak urine on the way to the bathroom. This usually goes away with time.
- You may eat anything you like. There are no diet restrictions.
- Please resume your daily home medications as soon as you are discharged from the hospital. (The only exception is Coumadin or other blood thinners – ask your doctor.)

Appendix A

Most Common Vaginal Mesh Complications

Recurrence of Prolapse – There is always the risk of recurrence of the prolapse, or subsequent prolapse of an additional or different compartment (meaning that if a cystocele is repaired then a rectocele may become symptomatic). Recurrence rates for traditional procedures are high. Approximately 30% of patients require a second or third procedure within 5 years. The recurrence rates are much lower if mesh is used to augment the repair, but still range around 5% over time. Additionally, vaginal mesh has only been used for about 10 years. Although we do not expect that recurrence rates will increase over time with mesh, it is impossible to know for sure what will happen in 20 – 30 years.

Vaginal Mesh Exposure – This is when the vaginal mucosa does not heal well over the mesh and it is exposed within the vagina. This happens in approximately 5 -10% of patients undergoing a vaginal mesh repair, and those with a severe lack of estrogen or history of pelvic radiation are at a much greater risk. Symptoms include ongoing vaginal discharge or discomfort for a sexual partner. The exposed mesh may be a source for recurrent UTI's. The best way to prevent this complication is to use vaginal estrogen cream prior to your surgical procedure and immediately afterwards. It is relatively easy to remove the exposed mesh in the clinic or in the operating room and usually does not cause any long-term problems.

Pain during intercourse – Unfortunately many women may experience pain with intercourse soon after a vaginal prolapse procedure. This can be due to the surgery itself, the inability to relax the pelvic muscles to allow for easy penetration, or that the mesh may be pulled (or contracted) too tightly. For the vast majority of women this improves drastically over the first few months and intercourse most often becomes more comfortable than it was pre-operatively. Occasionally women need to undergo some pelvic floor rehabilitation to improve the ability to relax the muscles. In a very small percentage of patients, however, the mesh needs to be "cut" during a small surgical procedure to allow for relaxation of the mesh and restore comfortable intercourse.

Mesh Erosion – For pelvic surgeons, this is the most feared complication. Thankfully it is also the least common complication and occurs at a **much less frequently than 1%**. Erosion is when the mesh protrudes into the bladder, urethra, or rectum. Symptoms may include blood in the urine or stool, pain, or recurrent infections. Removal of the mesh is the only treatment and may be attempted with a laser.

Chronic Pelvic Pain – Post-operative pain should be anticipated after these types of procedures. Usually the pain is relatively mild and last days to weeks. In few patients this pain can be an ongoing issue that may require intervention with pelvic floor rehabilitation, pain management services, or secondary procedures to deal with the pain. This complication also occurs **much less frequently than 1%**.

Appendix A

Fingertip Application Method for Estrogen Vaginal Cream

- Wash your hands with soap and water. Dry thoroughly.
- Squeeze out enough cream from the tube to cover 1/2 of your index finger.
- Locate the vaginal opening. Immediately above the vagina is the urethra (a small opening where urine is eliminated from your body). The urethra may not be as easily identified as the vagina, because the opening is much smaller; however, use the diagram to determine its approximate location.
- Carefully spread the cream onto the external vaginal/urethral area. As the cream is spread, some may be gently inserted into the vagina; however, it is not necessary the cream high into your vagina.

Appendix C

Kegel Exercises

Kegel exercises are recommended for both women and men who experience any degree of urinary leakage. They are designed to strengthen the muscles around the bladder and bladder opening. By exercising these muscles, you may improve your symptoms.

It is important that you perform the exercises correctly to gain the maximum benefits from them. Remember, exercise takes time to strengthen the muscles. If the exercises are done correctly, you should start noticing less leakage after 4-6 weeks of consistent daily exercise and even a larger difference after three months.

Finding The Pelvic Muscles

Tighten your rectum as if you are trying to control passing gas or pinching off a stool. Do not tense the muscles of your legs, buttocks or abdomen, and do not hold your breath. You can also imagine you are stopping the flow of urine. When men tighten the muscles, the penis will move up and down. If you are unsure you are using the proper muscles, or if your symptoms do not improve, ask your physical, nurse, or therapist to help you identify the muscles.

How To Do the Kegel Exercises

- Exercise is best done after emptying your bladder, never while sitting on the toilet. This promotes voiding dysfunction, incomplete bladder emptying, and may make your bladder symptoms even worse.
- Tighten the muscles and hold for 3 to 5 seconds. As your muscles get stronger, you should be able to tighten them for 10 seconds or longer.
- Relax for 3 to 5 seconds or for as long as you tightened the muscles. **This step is very important**.
- Breathe normally.
- Do 5-7 exercises at a time, 3 times a day. Increase up to 15 exercises at a time, 3 times a day.

The Kegel exercises can be done anywhere or anytime - sitting, lying, or standing. People around you will not even know you are doing them. Just develop a routine so you remember to exercise every day, and never while sitting on the toilet. Do these exercises when you have an incontinent episode. For example, if you are experiencing urine leakage on the way to the restroom, stop and exercise your pelvic muscles until the leakage passes, then continue to walk to the bathroom. If you leak urine when you cough, tighten the muscles quickly when you cough.